APPLICATION		
DASH NO.	NEXT ASSY	USED ON
		965-0868

TITLE SHEET

INDEX

	SHEET NO.
TITLE SHEET	1
REVISION STATUS OF SHEETS INDEX	2
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CONTRACT NUMBER			SUNDSTRAND AEROSPACE REDMOND, WASHINGTON 98073-9701 SUNDSTRAND CORPORATION			
DRAWN	J.E.H	92.9.17	Flight Line Maintenance Manual MK-VI Ground Proximity Warning System			
CHECK	------					
ENGR	J.E.H.	92.9.17				
MFG	------					
QA	------		SIZE	CAGE CODE	DWG NO.	REV
APVD	J.POE 92.9.17		A	97896	060-5918	A
APVD	J.O'BRIEN 92.9.17		SCALE: NONE		SHEET	1 OF 16

FLMMAN66.DOC

PRECIOUS METAL INDICATOR CODE: NA

REVISION STATUS OF SHEETS INDEX

SHEET NUMBER	REV LTR	ADDED SHEETS				SHEET NUMBER	REV LTR	ADDED SHEETS			
		SHEET NUMBER	REV LTR	SHEET NUMBER	REV LTR			SHEET NUMBER	REV LTR	SHEET NUMBER	REV LTR
1	A										
2	A										
3	A										
4	A										
5	A										
6	A										
7	A										
8	A										
9	A										
10	A										
11	A										
12	A										
13	A										
14	A										
15	A										
16	A										

SIZE	CAGE CODE	DWG NO.	REV
A	97896	060-5918	A
SCALE: NONE		SHEET 2	

REVISIONS				
SH	REV	DESCRIPTION	DATE	APPROVED
6	A	Change Dwg. from Desens to Flap Override.	93.1.8	D.E.H.
1-16	A	Change all Ref. of Desens to read GPWS Flap Override and retype all pages.	~~02.11.94~~	D.E.H. 2.5.97

SIZE A	CAGE CODE 97896	DWG NO. 060-5918	REV A
SCALE: NONE		SHEET 3	

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1 GENERAL

This document contains line maintenance data/information for the MK-VI Ground Proximity Warning System (GPWS) and is specific to Aircraft that are in accordance with previously approved installation arrangements.

The maintenance technician should thoroughly familiarize himself with the GPWS test overview and description and operation information, prior to attempting to troubleshoot the System. The self test operation should be understood and performed several times in order to be comfortable with its use. This document is to be used in coordination with the SDC 060-3942-000 Installation Design Guide. Many reference definitions and illustrations will be located in this Installation Design Guide. It is imperative to have this document on hand.

2 SYSTEM DESCRIPTION

The Sundstrand MK-VI is a simple and complete Ground Proximity Warning Computer in non-ARINC form optimized for installation and operation in Business/Commuter Turboprop aircraft.

For detailed System information please see Sundstrand document No. 965-0686-601, "Product Specification for Commuter/Corporate MK-VI GPWS".

The MKVI Ground Proximity Warning System is designed to provide alerts and warnings of potential controlled flight into terrain. The primary component of this warning system is the Ground Proximity Warning Computer (GPWC). The MK-VI Warning Computer is a Analog controlled computer intended to provide Ground Proximity warnings to the pilot. Data is collected from sensors on the Aircraft and processed to determine if the Aircraft is in danger. Visual and aural outputs advise the pilot of dangerous situations and indicate if the system is operational. The MK-VI system is configured for unique Aircraft requirements.

2.1 SYSTEM COMPONENTS

The Ground Proximity Warning System is normally comprised of the following components:

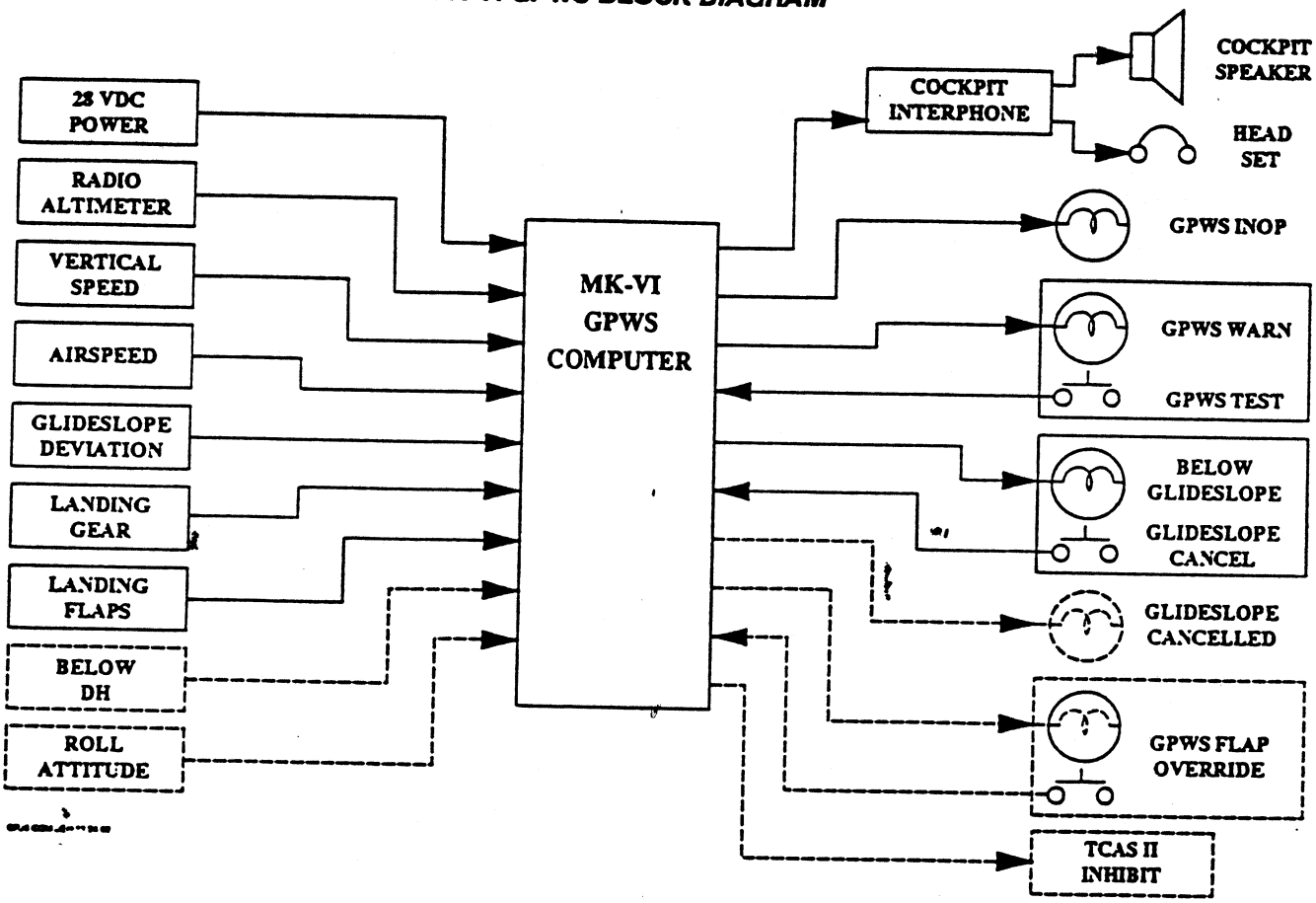
1 Ea.	MK VI Ground Proximity Warning Computer (Part No. 965-0686-001)
1 Ea.	Mounting Tray (Part No. 071-04003-0002) (Bendix/King)
1 SET	Annunciator Warning Cockpit light/Switches
1 Ea	Radio Altimeter and Indicator
1 Ea	Air Data Module
1 Ea	Gear (up/down) and Flap (position) Sensors
1 Ea	Glideslope receiver
1 Ea	Vertical Gyro (optional)

2.2 INSTALLATION PARTS LIST

See section six of the 060-3942 Installation Design Guide.

NOTE: The following Block Diagram is a typical example for reference only.

MK-VI GPWS BLOCK DIAGRAM



SIZE	CAGE CODE	DWG NO.	REV
A	97896	060-5918	A
SCALE: NONE		SHEET 6	

3 SYSTEM OPERATION

3.1 SYSTEM FEATURES

The MK VI GPWS predicts impending impact with the ground by giving visual and aural warnings and advisory messages for the following flight conditions:

MODE 1	Excessive Descent Rate
MODE2	Excessive Closure Rate to Terrain
MODE 3	Descent After Takeoff
MODE 4	Insufficient Terrain Clearance
Mode 5	Descent Below Glideslope
Mode 6	Aural Altitude Callouts
	(Optional)
	"Minimums, Minimums"
	"200" Feet
	"500" Feet
	"Bank Angle"

3.2 DETAILED OPERATIONAL FEATURES

MODE 1 Excessive Descent Rate

Mode 1 provides alerts and warnings for excessive barometric descent rates with respect to Radio Altitude during the descent and approach phases of flight. This mode has an outer alert boundary and an inner warning boundary. Both the alert and the warning produce visual and aural output indications.

MODE2 Excessive Closure Rate to Terrain

Mode 2 provides two types of alert/warnings based on aircraft gear/flap configuration, Radio Altitude between the aircraft and the ground (Terrain Clearance) and on how rapidly Radio Altitude is decreasing (Closure Rate). Barometric Altitude of the airplane is not important in initiating this warning. Both the alert and the warning produce visual and aural output indications.

MODE 3 Descent After Takeoff

Mode 3 provides alerts for barometric descents causing significant barometric altitude loss after take-off, or go-around below 200 Feet Radio Altitude, with Gear or Flaps in other than a landing configuration. Alerts for this mode produce visual and aural output indications

MODE 4 Insufficient Terrain Clearance

Mode 4 provides alerts for insufficient terrain clearance with respect to phase of flight and aircraft speed. Mode 4 exists in three forms, 4A, 4B and 4C.

Mode 4A is active during cruise and approach with Gear not in a landing configuration (and) GPWS FLAP OVERRIDE *NOT* selected.

Mode 4B is also active in cruise and approach, with either Gear in a landing configuration (or) GPWS FLAP OVERRIDE selected.

Mode 4C is active during the take-off phase of flight with either Gear or Flaps not in a landing configuration. alerts for each of these Modes produce visual and aural output indications.

Mode 5 Descent Below Glideslope

Mode 5 provides alerts for inadvertent descent below the Glideslope beam during an ILS approach. Mode 5 has an inner and outer alert boundary. Mode 5 also has a manual cancel feature, which can be activated by the flight crew using a momentary discrete switch input, and which activates a visual output when cancelled. Alerts for this Mode produce visual and aural output indications.

Mode 6 Aural Altitude Callouts

Mode 6 provides no visual output indications as part of these alerts. Mode 6 produces a "Minimums, Minimums" aural alert for descent below the selected DH (Decision Height) bug setting on the Radio Altimeter Indicator.

This Mode also produces altitude callouts at 200 Feet AGL on each approach, and at 500 Feet AGL for non-ILS approaches, or if inside the Glideslope alert envelope during a valid ILS approach, unless inhibited by the individual Optional Program Pins.

Mode 6 provides a "BANKANGLE" alert for excessive bank angles in either direction. This alert is repeated every three seconds for bank angles in excess of 40 degrees above 150 Feet Radio Altitude, decreasing linearly to 15 degrees at zero Feet.

4 REFERENCE DOCUMENTS

965-0686-601 Product Specification MKVI GPWC

060-3942 Installation Design Guide MKVI GPWS

076-0811 Installation Check Out/Ground Test Procedure Mk-VI GPWS

4.1 REQUIRED OPERATIONAL EQUIPMENT

See the SDC 060-3942 Installation Design Guide for Aircraft input interface equipment and tolerances.

4.2 OPTIONS

The MK-VI features two types of customer select options which are activated at the time of installation. The first type is "Wiring Activated" and the second type is "Program Pin Activated".

4.2.1 WIRING ACTIVATED OPTIONS

These Wiring Activated Options are functions which are included within the GPWC, and are available at the time of installation by connecting wire(s) from the appropriate signal source to the designated pin at the MK-VI interface connector.

The Wiring Activated options are as follows:

"BANK ANGLE" (Sundstrand Recommended)
Will alert the crew of severe overbanking during initial climb out or approach. The alert also helps crew awareness of excessive roll angle correction for runway alignment near the ground during partial visual breakout

ALTITUDE CALL OUTS :

"MINIMUMS, MINIMUMS" (Sundstrand Recommended)
Produces a "Minimums - Minimums" aural alert for descent below the (Decision Height) DH bug setting on the Radio Altimeter Indicator.

"200" Announces "200" Feet AGL altitude call out on each approach.

"500" This call out occurs only when there is no usable ILS glideslope.

EXAMPLES:

During non-precision and visual approaches. In most instances, the annunciation is approximately concurrent with the aircraft being 500 Feet AGL and stabilized in the landing configuration.

In Visual Meteorological conditions (VMC), the runway should be in sight and the aircraft stabilized on a normal descent path to the touchdown zone.

In Instrument Meteorological Conditions (IMC), the airplane should be past the final approach fix.

	If the Minimum Descent Altitude (MDA) is greater than 500 Feet and the approach is terminated, no call out will be heard.
Reduced Mode 6 Audio Alert Level	(Sundstrand Recommended) With this feature enabled, the Mode 6 messages (described below), and the Glideslope annunciations are reduced - 6db with normal ambient cockpit noise level. Activation of the windshield wipers will return the audio level of these messages to their normal level with no attenuation.
Stall Warning - Suppress GPWS audio output	This feature inhibits the GPWS audio output during a Stall Warning condition.
Backcourse Inhibit	This feature will inhibit Mode 5 (Descent Below Glideslope) during a backcourse approach.
Glideslope Cancelled Light	This cockpit Lamp will be illuminated with a manual cancellation of the Mode 5 Glideslope; i.e. this light reminds the crew that the warning mode has been intentionally cancelled. Descending below 50 Feet AGL, climbing above 1900 Feet or Deselecting the ILS frequency will automatically (Reset the condition) cancel/turn the lamp off.
TCAS Inhibit	This feature inhibits a TCAS II warning only during an actual message output from the GPWS. This does not include the 3 second repeat time for alert messages, but only the time during which the actual message is being annunciated.

4.2.2 PROGRAM PIN ACTIVATED OPTIONS

These Program Pin Activated options are functions which are included within the MK-VI, and are available at the time of installation by connecting a wire from the appropriate "Program Pin" of the Warning Computer interface connector to aircraft DC ground.

Audio Output Levels	The GPWC provides a selection of four different audio output levels. The power output option levels are 1/2 Watt, 1 Watt, 2 Watts and 4 Watts RMS into an 8 ohm speaker. The Sundstrand recommended nominal audio level is the 2 Watt setting. These program pins also select the audio levels for the GPWC 600 ohm output.
Alternate Mode 4B Threshold	Selects 150 Feet minimum for Mode 4B instead of 170 Feet minimum.
"200" Foot Call out - Inhibit	Disables "200" Foot call out from Mode 6 Callouts.
ALT 55 Scale Factor	Changes the Radio Altimeter Scale Factor input from ARINC 552 to accommodate the use of the Collins ALT 55 or King's KRA 405 Radar Altimeters.
Alternate Airspeed Expansion Range	Shifts Airspeed Expansion range down 30 knots.
Fixed Landing Gear	Changes the MK-VI inputs to accommodate a Fixed Landing Gear or Float Aircraft.
Invert Flap	Inverts the Flap direction logic for either 28 VDC or Ground active signal levels.

4.3 COCKPIT LAMPS

The MK-VI GPWS produces a visual alert or warning, as well as the aural sound over the Interphone and speaker. The visual warning is provided by the GPWS Lamps located in the cockpit and in front of the pilot and copilot. These Lamps are usually mounted in the glareshield or on the instrument panel.

The GPWS Lamps are as follows:

LAMP NAME	LAMP FUNCTION	COLOR/TYPE
GPWS Alert, Self Test	"GPWS" (Alert) Press to Test	Red/light switch
Glideslope Alert, Cancel	"BELOW G/S" (Alert) Press to Cancel	Amber/light switch
GPWS Manual GPWS Flap Override	"GPWS FLAP OVERRIDE" Press ON-OFF	Blue/light switch
System Validity	"GPWS INOP"	Amber
(*)Glideslope Cancel	"G/S CANCELED"	Amber

(*) OPTIONAL

5 GROUND CHECK OUT PROCEDURES

5.1 SYSTEM ACTIVATION)

The GPWS is normally active when the aircraft electrical power is applied, the GPWC 28 VDC breaker is in, the Annunciator Light power 28 VDC breaker is in, the GPWS INOP lamps are extinguished and all other Discrete inputs are valid. (ie; all systems are powered up)

RADIO ALTIMETER
AIR DATA COMPUTER
ILS RECEIVER
ROLL ATTITUDE

Verify that the following circuit breakers are closed (IN):

GPWS	28 VDC
Radio Alt.	Power
Nav Rec.	Power
Gear	Power
Flap Pos.	Power
Air Data Computer	Power

5.2 INITIAL CONDITIONS

Flaps Up

CAUTION: Be very careful when moving the Flaps up or down. Make sure that the wing area is clear of personnel, workstands, machinery and/or any other obstruction that would interfere with movement of the Flaps. Only qualified personnel should operate the Flap system.

Desens SW. Off

5.3 SELF TEST PROCEDURE

NOTE: If there is a noted problem (FAULT) with the system, (The Inop light is on) the ABNORMAL SELF TEST procedure will be applicable at this time.

5.4 NORMAL SELF TEST

1. Press and HOLD the GPWS Self Test Switch.
2. Observe that the GPWS Status (INOP) Lamp comes on immediately. Also observe that the G/S CANCEL Status Lamp comes on immediately. (If installed) Also observe that the GPWS FLAP OVERRIDE Status Lamp comes on immediately. (If installed)
3. Observe that the G/S ALERT Lamp(s) come on and remain on. (After a slight delay of .5 seconds) Observe that the Audio System Interphone and/or Speaker Annunciates "GLIDESLOPE" (one time only) at reduced volume.

NOTE: The TCAS Inhibit is activated during this "GLIDESLOPE" message. (Ie; only during an annunciation)

4. Observe that the GPWS ALERT/WARNING Lamp(s) come on (after an additional delay of two seconds). Observe that the Audio System Interphone and/or Speaker Annunciates "PULL-UP" (two to six) messages at a reduced volume.
5. Release the Self Test switch.
6. With all lamps off and the above messages annunciated the Self Test is complete with no System failures.

NOTE: To repeat this test wait 30 seconds for proper initialization.

5.5 ABNORMAL (FAULT) SELF TEST

1. The GPWS Status Lamp (INOP) will be on due to the fault.
2. Press and HOLD the GPWS Self Test Switch.
3. Observe that the audio System Interphone and/or speaker annunciates one or more fault messages ***ONE TIME*** at a reduced volume.

NOTE: Take note of the Fault Annunciations and refer to the Trouble Shooting procedure section of this document for Fault Isolation, Probable Cause and Remedy information.

4. To repeat the GPWS FAULT sequence, press the Self Test Switch again after a 1 second delay.

5.6 GPWS VALIDITY CHECK

1. Activate the system per 5.1 above.
2. Press Self Test and confirm that the System is functional if not previously completed.
3. Pull the GPWS circuit breaker. The "GPWS INOP" lamp shall Illuminate
4. Reset the GPWS breaker. After a delay the lamp will extinguish. No nuisance GPWS warnings shall result from this power off/on.
5. Pull the Radar Altimeter circuit breaker. The GPWS "INOP" lamp shall turn on within 5 seconds.
6. Press and HOLD the GPWS Self Test Switch.
7. The fault message "***RADAR ALTIMETER FAULT***" shall be annunciated.
8. Release the GPWS Self Test Switch. Reset the circuit breaker. There shall be *NO* GPWS Warnings during this circuit breaker off/on cycle.

6 TROUBLE SHOOTING GUIDE

6.1 GENERAL

This section presents information for isolating basic Ground Proximity Warning System troubles to the LRU's or Aircraft wiring while it is installed in the Aircraft.

6.2 TROUBLESHOOTING PROCEDURE

Follow the procedures as outlined in this section with the aid of the Isolation Fault Chart to isolate the GPWS trouble to a faulty Unit or Aircraft wiring.

1. Possible fault messages, and their cause are as follows:

FAULT MESSAGE	*SIGNAL*	*CAUSE*
RADIO ALTITUDE	+28 VDC VAL (+)/(-) SIG	RA Validity or RA Signal open
GLIDESLOPE	DC Deviation (+UP) (+DWN)	open (+) or (-) Deviation Signal
BARO RATE	+28 VDC VAL (+)/(-) SIG	BRAT Validity or Signal open

NOTE: For Internal GPWS faults such as an out-of-tolerance or loss of a power supply no Audio annunciation will be observed. There are other Internal failures that may exhibit one or more of the "NORMAL" test observations and be at fault.

6.3 NO SELF TEST RESPONSE

All Annunciator Lamps are driven by ground signals from the Ground Proximity Warning Computer. Any time a lamp stays on or off check wiring, lamp, or computer.

At initialization there are various conditions which do not allow Self Test to be initiated. The following table lists these conditions and most probable cause:

NO RESPONSE CONDITION	*PROBABLE CAUSE*
No lamps lighted on Annunciator Panel (No response to Self Test)	1. Loss of GPWS Power or Lamp +28 VDC. 2. Computer failure. 3. Annunciator Self Test Switch fault. 4. Wiring fault
Lamps blink continuously (No response to Self Test)	1. GPWS Computer at fault
No Voice but lights	1. Check Stall Warning and Aircraft Audio System Power and ground wiring
Voice but No Lights	1. Check +28 VDC Light Circuit Breaker or Aircraft wiring to lights.
Inop Lamp on No Self Test	GPWC +28 VDC Circuit Breaker or Aircraft wiring
No Glideslope Voice	1. GPWS Computer at fault

For in air intermittent problems request the following information when the GPWS INOP Lamp illuminates.

1. Pull the Radio Altimeter Circuit Breaker.
2. Self Test The System per the Flight Manual Supplement.
3. Record the fault warning annunciation for Ground Crew Troubleshooting.
4. If the warning annunciation was Glideslope reset the Radio Altimeter Circuit Breaker and operate all modes except Glideslope.

6.4 ISOLATION FAULT FLOW CHART

All circuit Breakers are in	
All Systems are powered up	
Self Test per Above	
Lamps and Message OK	
NO	YES
See the block below	Return the System to Service
Isolate the Fault as shown below and Repeat Self Test after all LRU replacements. If the Fault is not Correct move on to the next step otherwise return Aircraft to service.	

Radio Alt Fault	Glideslope Fault	Baro Fault	Light/Switch Fault
Is Rad Alt Ind ok	G/S only Fault	Check Air Data Module +28 VDC/Gnd	See Ground Test 076-0811
IF Rad Alt Ind not ok Replace Rad Alt LRU	Check Glideslope + up, + dwn signals	Replace Air Data Comp.	Replace Light/Switch or wire as instructed
Replace the MK6 LRU	Check the System per Ground Test 076-0811	Replace the MK6 LRU	Return to Service
Check the System per Ground Test 076-0811	Replace the MK6 LRU	Check the System per Ground Test 076-0811	
Repair and return to Service	Repair and return to Service	Repair and return to Service	

6.5 FAULT MESSAGE ANALOGY

MESSAGE -VS- PROBABLE CAUSE

DURING SELF TEST			POWER UP	CAUSE
MESSAGE	LAMP		LAMP	INTERFACE INPUT
VOICE	*PIU*	*GIS*	*INOP*	*CONNECTOR PIN NO.*
RADIO ALTITUDE FAULT	OFF	OFF	ON	RADIO ALT VAL J1-29
RADIO ALTITUDE FAULT BANK ANGLE	OFF	ON	ON	RADIO ALT PLUS J1-64 SIGNAL
GLIDESLOPE, RADIO ALTITUDE FAULT	OFF	ON	ON	RADIO ALT MINUS J1-45 SIGNAL
BARO RATE FAULT	OFF	ON	ON	BARO RATE VAL J1-09
BARO RATE FAULT	OFF	ON	ON	BARO RATE SIG (+) J1-62
GLIDESLOPE BARO RATE FAULT	OFF	ON	ON	BARO RATE SIG (-) J1-43
NORMAL	N/A	N/A	N/A	AIRSPEED SIG (+) J1-63
NORMAL	N/A	N/A	N/A	AIRSPEED SIG (-) J1-44)

ON THE GROUND WITH SYSTEM INITIALIZED:				
AFTER SELF TEST			**POWER ON**	**CAUSE**
MESSAGE	**LAMP**		**LAMP**	**INTERFACE INPUT**
VOICE	*P/U*	*G/S*	*INOP*	*CONNECTOR PIN NO.*
"PULL UP", GLIDESLOPE FAULT	ON	OFF	ON	GLIDESLOPE (+) UP J1-65
"PULL UP", GLIDESLOPE FAULT	OFF	OFF	ON	GLIDESLOPE (+) DN J1-46

6.6 INPUT SIGNAL AND VOLTAGE CHART

PIN	WIRE	DESCRIPTION
1	Roll Attitude (X)	Roll Synchro X leg input
2	Chassis Ground	Connects to Airframe Ground
3	Spare #1 Program Pin	For future use
4	Alt A/S Program Pin	Alternate Airspeed Scale Factor, Alt = DC GND
5	Fixed Gear Program Pin	Fixed Landing Gear/Float A/C, Fixed = GND
6	Volume #2 Program Pin	Audio Volume Control, 4 Watt = Gnd (Both #1 and #2 = 1/2 Watt) see Pin 26
7	200 Ft Dis. Program Pin	200 Foot Callout Disable = Gnd
8	R/A Scale Program Pin	Radio Altimeter Scale Factor Select, ALT 55 = GND
9	Baro Rate Valid	Barometric Altitude Rate Validity, +28 VDC
10	Glideslope Valid Return	Glideslope Deviation Low Level Validity (-)
11	Glideslope Super Flag	Glideslope Deviation Validity, +28 VDC
12	Spare Connector Pin	For Future Use
13	Alt Volume Reduction	Altitude Callout Reduction Discrete = Gnd
14	GPWS FLAP OVERRIDE	Desensitize Discrete, Momentary Gnd
15	Glideslope Cancel	Manual Discrete Cancel = Momentary Gnd
16	Landing Gear	Gear Discrete, Down = Gnd
17	Audio Suppression	External GPWS Discrete, Suppression = Gnd
18	Flap Position	Flap Discrete, NOT Landing = Gnd
19	ILS Backcourse	Backcourse Approach Selected Discrete, Backcourse = Gnd
20	ILS Select	ILS Frequency Selected Discrete, ILS = Gnd
21	Roll Attitude (Y)	Roll Synchro Y leg input
22	Spare Connector Pin	For Future use
23	Spare Connector Pin	For Future use
24	Flap Invert Program Pin	Landing Flap Logic Inversion, Invert = Gnd

PIN	WIRE	DESCRIPTION
25	Alt Mode 4B Program Pin	Alternate Mode 4B Threshold, Alt. 150 Ft = Gnd
26	Volume #1 Program Pin	Audio Volume Control, 1 Watt = Gnd (Both #1 and #2 = 1/2 Watt) see Pin 6
27	500 Foot Program Pin	500 Foot Altitude Callout Disable = Gnd
28	Spare #1 Discrete	For Future use (+28 VDC)
29	Radio Alt Valid	Radio Altimeter Validity, +28 VDC
30	Glideslope Valid Signal	Glideslope Deviation Low Level Validity (+)
31	Spare #1 Discrete	For Future use (Ground)
32	Airspeed Discrete	Airspeed Expansion, > Speed Threshold = Gnd
33	DH Discrete	Decision Height, Below DH = Gnd
34	Self Test	GPWS Self Test Discrete, Ground Active
35	Gear Down	Landing Gear Discrete, DOWN = Gnd
36	Audio Suppression	External GPWS Discrete, Suppression = +28 VDC
37	Flap Position	Flap Discrete, NOT Landing = +28 VDC
38	ILS Backcourse	Backcourse Approach Selected Discrete, Backcourse = +28 VDC
39	ILS Select	ILS Frequency Selected Discrete, ILS = +28 VDC
40	GPWS Power Input	Operating Power, +28 VDC
41	GPWS Power Input	Operating Power, DC GROUND
42	Chassis Ground	Connects to Airframe Ground
43	Baro Rate Return	Barometric Altitude Rate Input, (-)
44	Airspeed return	Airspeed signal input (-)
45	Rad Alt return	Radio Altimeter input (-)
46	G/S Deviation (+)	Glideslope input, (+) = Above the Beam, Fly Down
47	Test Point #1	CAUTION: Do Not probe or Connect to.
48	Test Point #2	CAUTION: Do Not probe or Connect to.
49	Test Point #3	CAUTION: Do Not probe or Connect to.
50	Test Point #4	CAUTION: Do Not probe or Connect to.
51	Test Point #5	CAUTION: Do Not probe or Connect to.
52	Test Point #6	CAUTION: Do Not probe or Connect to.
53	Test Point #7	CAUTION: Do Not probe or Connect to.
54	Test Point #8	CAUTION: Do Not probe or Connect to.
55	Test Point #9	CAUTION: Do Not probe or Connect to.
56	Test Point #10	CAUTION: Do Not probe or Connect to.
57	Test Point #11	CAUTION: Do Not probe or Connect to.
58	Test Point #12	CAUTION: Do Not probe or Connect to.

PIN	WIRE	DESCRIPTION
59	Test Point #13	CAUTION: Do Not probe or Connect to.
60	GPWS Power Input	Operating Power, +28 VDC
61	GPWS Power Input	Operating Power, DC GROUND
62	Baro Rate Signal	Barometric Altitude Rate Input, 500 mVDC/1000 FPM
63	Airspeed Signal	Airspeed signal input, 10 VDC/450 Knots
64	Rad Alt Signal	Radio Altimeter input, DC Signal
65	G/S Deviation (+)	Glideslope input, (+) = Below Beam, Fly Up
66	Spare	For Future use
67	Spare	For Future use
68	Spare Lamp Output	For Future use, Lamp on = Gnd
69	TCAS II Inhibit	TCAS Inhibit Output = Gnd
70	Audio Speaker (H)	Audio Speaker Output Signal High (+)
71	Audio Speaker (C)	Audio Speaker Output Signal Low (-)
72	Inop System Fault Lamp	GPWS Status Lamp Output, Fault = Lamp On
73	FLAP OVERRIDE Lamp	GPWS Flap Override Lamp Output, Activated = Gnd = Lamp On
74	Audio Low Level Return	Audio Output Signal (C)
75	Audio Low Level Signal	Audio Output Signal (H)
76	G/S Cancelled Lamp	Glideslope Cancelled Lamp Output, Cancelled = Gnd = Lamp On
77	G/S Alert Lamp	Glideslope Warning Output = Gnd = Lamp On
78	GPWS Alert Lamp	GPWS Warning Lamp Output = Gnd = Lamp On

7 REMOVE AND REPLACE

7.1 REMOVAL

1. To remove the MKVI GPWC, assure that the GPWS Circuit Breaker labeled "GPWS POWER" on the DC Bus breaker panel is pulled.
2. Remove GPWC front Cable "J" connector and the knurled retainer knob that secures the GPWC into the Mounting Tray by taking it off the clip retainer.
3. Slide the GPWC Assembly out of the Mounting Tray.
4. Install the GPWC connector protection cap.

7.2 INSTALLATION

1. To install the MKVI GPWC, assure that the GPWS Circuit Breaker labeled "GPWS POWER" on the DC Bus breaker panel is pulled.
3. Slide the GPWC Assembly into the Mounting Tray.
4. Push the GPWC back into the tray until it is securely seated.
5. Install the knurled retainer knob that secures the GPWC into the Mounting Tray and tighten on to the clip retainer.
6. Remove the GPWC connector protection cap.
7. Install GPWC front Cable Connector to the front "J" Connector on the GPWC.